

Michael Valeur

“The Handling of Complexity: Some Tools for Interactive Scriptwriting”

New Media Production: Issues and Strategies

Universidade Lusófona, Lisbon 2005

The handling of complexity: Some tools for interactive scriptwriting

“Can you hear the strings your majesty...? Now the violins double the theme and later it is doubled once again by some other instrument. Do you know how many times I can do that?”

“Four times”

“No, sixteen times your majesty, I can double it sixteen times and it still wont fall apart – how do you like it?”

The king looks a little confounded and turns toward the royal advisor who discretely comments: *“Too many tones”*

The king addresses Mozart once again and repeats the words of his advisor: *“An excellent piece, Mozart, but I think it contains too many tones”*

Mozart stares at the king in bewilderment and refuses to accept this as an answer. For a while he tries to make the king explain his statement but the King remains silent: He doesn't really have any doubts about the superiority of the composition he just can't deal with its level of complexity.

With the emergence of interactive media the concept of the recipient has been changed. What used to be a spectator has now become a user or participant who makes choices within the text. This brings about the notion of multilinear textual structures, that is, structures that provides the new participant a new level of freedom in his interaction with the text. As creators of interactive fictions we have to let go of our classical dramaturgical structures and make use of new multilinear ones and sometimes during this work we may feel a little like the king in the dialogue above: The level of complexity goes beyond our mental capabilities, the number of possible combinations reach unexpected dimensions, and we ask ourselves how Mozart managed to do what he did.

When it comes to the domain of music I don't have any answers to this question but when it comes the field of interactive scriptwriting I do have some viewpoints. In this paper I would like to present some of these. That is, I would like to deal with the concept of complexity in interactive scriptwriting and propose some tools that may help to keep it down at a manageable level.

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Blow up projects and digital gravestones

In the work of developing interactive concepts for different sorts of platforms you may have met the notion of the “blow up project”. “Blow up projects” are projects that seem to blow up in the face of the developers because the amount of possible choices and outcomes seem to multiply exponentially. If there ever were a cemetery of rejected ideas an enormous amount of blow up projects would lie beneath the digital gravestones. This mainly has its explanation in the sheer fascination with open structures and, in particular, the idea of creating an interactive fiction that “self-generates”. With this notion the first and most important mistake has been made because working with interactive structures does not mean that things work on their own or that content appears out of nothing. The time you didn’t spend on writing linear sequences of action now has to be spent on establishing clear and consistent frames of action in an open universe. There are no short cuts in the fields of interactive scriptwriting it’s just another kind of effort.

Failing to recognize this fact results in blow up projects. I would like to exemplify this with some typical ideas:

1. The fairy tale engine for a computer platform: We take a number of fairy tales and analyse their fundamental structures. On the basis of this analysis we create a number of archetypal characters, actions and conflicts and a choice of happy endings. This material is presented to the user so that he can create a fairy tale that resembles a classical one – only this is his own creation out of a multitude of possible combinations.
2. Flash theatre on the Internet: In this project the user is given the possibility of designing his own character with regard to its visual appearance, behaviour and temper. Furthermore, he can choose between a number of tools for different kinds of actions (a gun, a flower, a book etc.) and of course different kinds of locations. In this way he can create his own personal theatre by experimenting with the outcomes given by different combinations.
3. An interactive film database – created for an ITV platform: We have been given the legal rights to a film database and we want to turn it into a piece of interactive entertainment. We establish a number of categories like genre, person, mood and so on, and we arrange our material in accordance with this. Now the user can create a movie of the material in the different categories, with nearly unlimited possibilities.

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Doesn't this sound like some brilliant ideas? They aren't, or rather, the effect and appeal of the final product does not equal the work it takes to realise them. All of the suggestions above seem to gain their worth from their level of complexity – the amount of different outcomes. However, this complexity has to be organised and presented in some way, and this is where the problems appear. Below you find a list of the most important ones:

The graphical implementation: One of the most obvious problems is how to create unity in the design. In the case of the fairy tale engine and the flash theatre this may be achieved but in the case of the interactive film database it is practically impossible. It would be easier to create the material from scratch.

Language and communication: Whether we talk about communication between fiction and user or within the interactive fiction, language is an extremely complex phenomenon. To establish a dialogue out of simple principles in order to get a meaningful conversation is a very difficult matter. Language has more layers than just “question” and “answer” and a simulation of a conversation in a formal system seldom create very impressive levels of meaning.

Dramaturgical structure: The question about dramaturgical structure also appears in this list and I will use the flash theatre as an example. We choose five different characters that each holds five different kinds of mood – this produces twenty-five possible patterns of behaviour. Now these patterns of behaviour are to be combined in a sequence of action with every outcome depending on the specific patterns of behaviour implied. Try to organise this in a flowchart – and try to create a sequence of action with more than one scene. The flowchart will soon resemble a nuclear explosion.

Interesting content: The question of content is closely connected to the question of dramaturgical structure. Even though we have a number of film clips or flash creations we don't necessarily have an interesting content in the qualitative sense of the word. The dramaturgical tension, interesting conflicts and, in particular, the surprise, seldom appears from these concepts because they need the dynamics of the traditional story. Instead the possibility of interaction is to keep the user engaged.

Interaction and user position: However, this creates a final problem. In the concepts above, the user has been given the role of “pushing the button” in order to see what happens in the fictional universe. That is, he is given an amount of configurative power and afterwards he is expected to act

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like a traditional spectator. But if this is going to work, at least what he sees has to be interesting and engaging, and this rarely happens because of the problems above.

In short: If you want to work with interactive entertainment it shouldn't be in order to save time. Open universes and multilinear structures take a lot more time and effort than you may expect at a first glance. A great part of this effort is spent on solving some of the problems above, and I won't claim to have all the answers in this essay. For example I don't know much about graphical implementation. As an author, however, I know a lot about language, dialogues and the orchestration of action, and in the following sections I will make some suggestions about how to deal with complexity in these fields.

The problem about language and dialogue

Back in 1997, when I wrote the script for *Blackout*¹, the dominating adventure-games would use dialogue boxes with, for instance, four different answers to a given question. The conversation would proceed in accordance with the answer you chose. This method continues until today, with *Neverwinter Nights*² as a newer example. But this solution requires some sort of linear story to hold on to if it is not going to proliferate into one hundred directions. Like the example of the “flash theatre” above a question with four different answers – each with an individual follow up that implies a new set of questions – quickly generate a chaos of possible tracks. But the linear story was not the ambition with *Blackout* and it is not the ambition with the concepts above and this has made some people look for an alternative.

This alternative has often been the language generator. They exist in many variations with *Eliza* as the most famous one: A programme that asks questions and engages in seemingly meaningful conversations. This can take place because the programme contains some basic rules with which the input of the user is analysed and a plausible answer is created. In this way each answer does not have to be prefabricated – it is created on spot. This does not make it more sensible to the situation, however, and the computer is still not able to recognise if the user is talking nonsense or if the meaning is to be found between the lines or in the context.

¹ Blackout, 1997 – Deadline Media

² Neverwinter Nights, 2003 - Atari

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If, for instance, I initiate a conversation with *Agent Ruby*³, it may ask me about my occupation. To this I answer; “author”. But it replies that it “doesn’t know any of that name”. The communication breaks down because my occupation is not listed in the database of agent Ruby or because I fail to answer in a way it manages to recognise as an answer – like “my occupation is author”. As long as the communication stays within the field defined by the rules of the system the communication runs smoothly, but as soon as we move beyond this field it breaks down. The human part either chooses to communicate in accordance with the rules of the system or to lay its limitations bare – it is never going to be a symmetrical conversation. Humans and computers just communicate in fundamentally different ways.

In *Designing the user interface* Ben Schneiderman elaborates a little further on this problem with the concept of communicational layers. More specifically, he talks about the conceptual, the semantic, the syntactic and the lexical layer in all sorts of communication. The conceptual layer has to do with the user’s mental model of what is going on in the computer, and this is not necessarily in accordance with the actual process. For instance, the user holds an illusion of having a conversation whereas the computer answers back on the basis of rules and word recognition. The user relates to the conceptual layers but the computer answers back at the syntactical and lexical layer. Maintaining the illusion requires an extreme precision and the syntactic and lexical layer, that is, at the layers that have to do with word recognition and the creation of sentences. As soon as a certain level of abstraction is introduced, problems appear in these levels and the communication breaks down.

This problem is going to appear every time we work with concepts like those presented above. If we are to create plausible conversations between fictive characters and if we are to let the user intervene in this action a confusion of layers will soon emerge. However, in one particular production this problem has been solved successfully. The developers behind “The Sims” initially faced a great challenge as they were building an open universe with a great number of characters that all had to be able to communicate with each other in a “meaningful” way. Their choice was to make the characters talk “rubbish”, that is, nonsense with no specific meaning. The character’s way

³ www.agentruby.com/indexflash.html

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of talking this rubbish, however, would be rich on intonation and other nonverbal effects as well as it was combined with different sorts of simple icons – boats, cars or perhaps a little heart – to which the user could easily attach some sort of meaning. Put very simply the developers avoided the lexical and syntactic layer of human language and created a much simpler system. This system was presented in a visual and auditive manner that would appeal to the creation of meaning at a more conceptual level in the head of the user. A very clever solution, if you ask me, and it may lead us to a more general philosophy about language, dialogue and meaning in interactive fictions: Don't try to simulate human language at its more complex levels – you should rather take advantage of the human tendency to attach meaning to structures at a more conceptual level. Our inclination to project affection and meaning into things is a much more powerful tool.

This doesn't solve the problem about the orchestration of action in interactive fiction, however, it just makes it a little easier to manage language. How to handle several tracks of action is another question that I will now turn to.

Dramatic structure, content and the orchestration of action

Interactive fictions are often depicted as tree structures: The user is given a set of choices and each of these leads him to a new set of choices. This continues in several sections and the story takes the form of a Christmas tree or a pyramid. When this model is used as a practical writing tool it produces enormous and unmanageable scripts. At the same time it often has boring stories and a lack of dynamics as a consequence since at least some of the one hundred and seventeen endings will have to be less interesting than the other ones. On the whole: If you are to make a multilinear story work, you will have to keep the possible tracks of action down at a level where you can still ensure some sort of story dynamics. I suggest three ways of doing that: the loop-back, the hallway and the plotpoint.

The loop-back, the hallway and the plotpoint

When you use a loop back, you still give the user a number of choices but some of them will just send him back where he started. For instance, you may find yourself in point A with the choice of going to B or C. If you choose B it gives you the choice between another couple of points, D and E, but if you choose C it just sends you back to A. This is an obvious way of reducing the number of

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possible tracks, but it often slows down the action and gives the user a sense of reduced freedom. Hallways may be a better solution. Hallways are points where different strings of action meet. Whether you choose A or B, D or E, you may still, at some point, end up in H. In this way the different strings of action end up in the same place but it will be experienced differently depending on where the user comes from. In this way hallways will help reducing the complexity while still giving the user the sense of a choice.

If they are used in the right way, hallways may become useful dramatic tools, so called plot-points. *Plot-points are points in the structure where essential action occurs. We used this in *Blackout* in order to maintain a dramatic structure. In this fiction the user moves freely in an open space and the story emerges from his explorative activity. Having explored the world for a while, however, things may lose their drive and in order to avoid this we would place three plot-points in the structure. At these points, that all users would have to pass through, fatal action would occur that changed the entire environment. Three points were enough to uphold some sort of dynamic storyline while the sense of freedom was still maintained.

Writing tools like the loop-back, the hallway and the plot-point help to reduce an unworkable number of possibilities but they don't necessarily make it easier to handle the possibilities that are still there. You may spend hours and hours on making a structure fit and suddenly realise that you have created too many plot-points – the action has become too limited. Or you may realise that one part of the script has become oversized as compared to the other parts – probably because the dramatic potential of this part is just a little more obvious. There are several ways of dealing with these problems and I would like to focus on the “mode” and the “mirror”.

Modes and mirrors

The “mode” as a dramatic writing tool represents an alternative to the character or the story line. Sometimes it's better to think less about the single actions that make up the whole and think more about the quality of the different locations. Instead of describing in detail how the meeting between character A and character B, C, D, E, F and G may unfold, you can let it depend on the location where they meet and let this location have a number of moods or themes like fight, love, exchange of information and so on. The specific theme and the temper of the characters will now determine how the action unfolds. In this way the storyline is not attached to the single characters or actions

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but to a limited number of locations that are more easily connected into a general structure. Furthermore, this is a good way of reducing complexity of action. You define a specific frame of action – the location – and with this you define the limits of possible action.

The modes makes it possible to use themes and greater chunks of action as a way of building up a general structure while the metaphor of the mirror concerns the balance of this structure. Too often, one part of the script works perfectly while others seem to lack something. The mirror is a way of dealing with this problem by relating the different parts to each other. This can be done at a structural level: all strings are to have the same amount of themes or they have to peak at the same time. But you can do it at a more qualitative or thematic level too: If one scene or location ends up in tragedy, another has to end happily and a third one may end in a more ambiguous way.

The concept of the mirror is not necessarily limited to one reflection. In the script for *Blackout I* was working with four elements: fire, water, earth and air. These elements would reflect each other and keep a more general structure together by limiting possible action to four specific themes: aggression and action (fire), systems and pragmatics (earth), intellect and deliberation (air) and affection and melancholy (water). Each of these themes would represent a possible action at a given location and in this way help me to ensure a harmonious growth in the entire script. In a later production, *The Angel*⁴, I used the concept of mirror-worlds in a slightly other way. In this story the user follows a person suffering from schizophrenia and a male nurse who is taking care of him. The user may choose to move back and forth between the two viewpoints or to stay a little longer with one of them but in any case he will meet two radically different experiences of the fictional world. Still, any action that is initiated in one world will be mirrored in the other and as they are two very different realities what is considered to be positive in one world may not be so in the other. This created a constant dramatic tension and movement as well as it was a good way of ensuring a synchronous growth in the entire script.

⁴ The Angel, 2000 – Deadline Media

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The illusion of self-generation and the handling of complexity

To sum up, stories do not just write themselves. Throwing raw material, user and platform together with no further elaboration seldom gives a good result and if the user is given the possibility of combining just about anything he often ends up with a pile of unstructured information. Stories do not emerge from *random* combinations they emerge from *dynamic* combinations. For this reason you do not create a fairy tale engine or a flash theatre by laying forth your raw material and letting loose – it would be like letting Mozart’s orchestra of forty musicians play whatever they liked without a conductor. The interesting fictions emerge when the user is given the possibility of participating within a certain frame of action. In this way writing interactive fiction is not the art of *eliminating* the frame of the story but the art of *creating* a frame that challenges the story.

These frames have to be made as invisible as possible but they have to be there. In *Myst* and *Riven*⁵ the physical frame of the island brings a limit to the user’s actions in a way that makes sense in relation to the story. This is a useful principle in the creation of interactive fictions in general and in this essay I have presented some possible tools for achieving it. Hallways and plotpoints are ways of ensuring that the user can move freely and get the important information anyway. Mirroring and similar methods ensures balance and consistency in the story-world.

Most importantly, no fictive universes or story-worlds self-generate. You cannot skip or minimise the time and effort – you just employ it differently. The great challenge concerns how to deal with complexity.

⁵ *Myst*, 1993 – *Riven*, 1997 - Brøderbund Software